

Smith, George

From: Fischer, Shane <SFischer@SCSEngineers.com>
Sent: Friday, April 22, 2022 1:23 PM
To: SWD_Waste; Tafuni, Steven; Madden, Melissa
Cc: Robert.shankle; Bryan White; Anthony Detweiler; Lebron, Carlo; Al-Khalaf, Laila
Subject: Lena Road Landfill Annual Site Life Reporting Year 2022
Attachments: Lena Road Landfill Annual Site Life Reporting Year 2022.pdf

EXTERNAL MESSAGE

This email originated outside of DEP. Please use caution when opening attachments, clicking links, or responding to this email.

In accordance with Permit No. 39884-021-SO-01, please find attached the Manatee County Lena Road Landfill Remaining Disposal Capacity and Site Life calculations for Reporting Year 2022.

Please let us know if you have any comments.

Thanks

Shane R. Fischer, P.E.
Vice President/Office Manager
SCS Engineers
3922 Coconut Palm Drive, Suite 102
Tampa, Florida 33619
(813) 804-6714 (W)
(813) 503-1044 (C)
sfischer@scsengineers.com

Driven by Client Success
www.scsengineers.com

April 22, 2022
File No. 09217088.24

Florida Department of Environmental Protection
Solid Waste Section, MS 4565
2600 Blair Stone Road
Tallahassee, Florida 32399

Subject: Remaining Disposal Capacity and Site Life – Reporting Year 2022
Lena Road Landfill - Manatee County
Permit No.: 39884-021-SO-01

Dear Mr. Jarmolowski:


On behalf of the Manatee County, Solid Waste Division (SWD), SCS Engineers (SCS) has prepared the remaining disposal capacity and site life estimate for the Lena Road Landfill, located in Manatee County, Florida in accordance with Rule 62-701.500(13)(c) and Section 2 - Specific Condition Part C.15.b of the facility's solid waste operation permit. As required by the Specific Condition an aerial topographic survey of the landfill was conducted on January 31, 2022 by Pickett & Associates, Inc. (Pickett) and was used in the preparation of the site life calculations. Please refer to Attachment A for a copy of the Pickett Survey Report and Survey.

Based on the attached calculations, there is roughly 9,602,023 CY of remaining capacity in Stage II which relates to approximately 19.5 years as of the survey date. The anticipated closure year is near mid 2041. Please refer to Attachment B for the remaining life and capacity calculations. If you have any questions regarding the information contained herein, please contact the undersigned at (813) 804-6714.

Sincerely,



Ka Leigh Biss, E.I.
Associate Professional
SCS Engineers



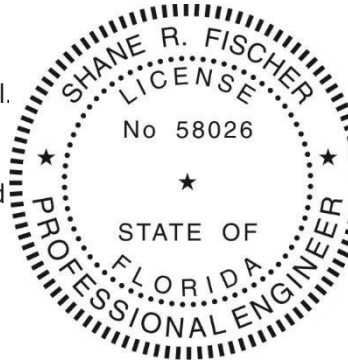
Shane R. Fischer, P.E.
Vice President/Office Manager
SCS Engineers

SRF/KBB:kbb

cc: Robert Shankle, Solid Waste Division Manager
Bryan White, Manatee County Landfill Superintendent
Anthony Detweiler, Manatee County Landfill Operations Supervisor
Bob Bennett, Manatee County Landfill Operations Supervisor

This item has been digitally signed and sealed by
Shane R. Fischer, PE on the date adjacent to the seal.

Printed copies of this document are not considered
signed and sealed and the signature must be verified
on any electronic copies.



**Shane
Fischer** Digitally signed
by Shane Fischer
Date: 2022.04.22
12:32:43 -04'00'



ATTACHMENT A

**PICKETT AERIAL TOPOGRAPHIC SURVEY
FLOWN JANUARY 31, 2022 AND SURVEY REPORT**

SURVEYOR'S REPORT

Lena Road Landfill

Prepared for:

SCS ENGINEERS
Environmental Consultants and Contractors

Prepared by:



PICKETT AND ASSOCIATES PROJECT NO.: 18600-5
TITLE/TYPE OF SURVEY: TOPOGRAPHIC SURVEY
DATE OF SURVEY: 1/31/22

***NOTE: THIS REPORT AND ACCOMPANYING MAP TITLED LENA ROAD LANDFILL,
ARE NOT FULL AND COMPLETE WITHOUT THE OTHER AND ARE NOT VALID
WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA
LICENSED SURVEYOR AND MAPPER.***

ACCURACY STATEMENT:

The following stated plus, or minus tolerances encompass a minimum of 90% of the difference between photogrammetrically measured values and any ground truth of all well-identified features. Mapped features will meet or exceed the Florida Standards of Practice.

VERTICAL:

Contours may be measured to an estimated vertical positional accuracy of 0.5'. Spot elevations and well-identified features have been measured to an estimated vertical positional accuracy of 0.25'.

HORIZONTAL:

Well-identified features have been measured to an estimated horizontal positional accuracy of 1.66'. All measurements are in U.S. Survey Feet.

MAP PLOTTING:

This map is intended to be displayed at a scale of 1" = 50' (1:600) or smaller.

DATUM:**HORIZONTAL:**

Coordinates are referenced to the West Zone of the Florida State Plane Coordinate System, North American Datum of 1983 (NAD'83) 1990 adjustment.

VERTICAL:

Elevations are to National Geodetic Vertical Datum of 1929.

Targeted and Photo-identifiable Control Points used for photogrammetric mapping:

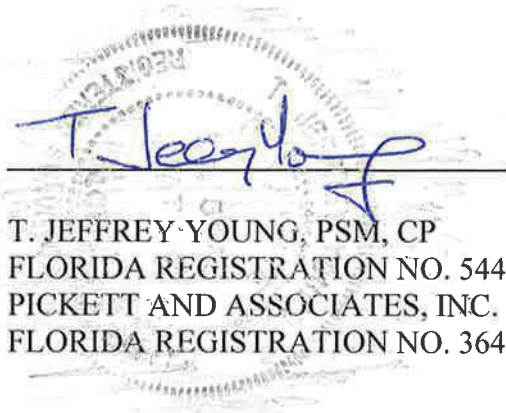
Pt#	Northing	Easting	Elevation
T-1	1141545.95	509165.88	33.91
PID-1	1138428.30	511092.73	38.89
PID-2	1138562.79	513590.75	40.88
PID-3	1144105.55	513482.01	38.26
PID-4	1144330.78	512336.06	39.14
PID-5	1146038.75	508797.91	22.80

Measurement Methods:

Color digital imagery was acquired at an average altitude of 3500' using a metric precision digital camera whose focal length is 70.3mm. The planimetrics shown are limited to those features visible on aerial imagery. Mapping was performed using LiDAR and softcopy photogrammetric techniques. The LiDAR data has an estimated point sample distance of 0.712 foot and a density of 1.97 points per square foot (± 21.205 points per square meter). For a vertical accuracy check, the LiDAR data was compared to six (6) points used as targets for aerial imagery and twenty-five (25) ground surveyed points. The Root Mean

Square Error of the Elevations (RMSEZ) is 0.034 foot, being the equivalent of 0.067' FGDC/NSSDA Vertical Accuracy. All measurements are in U.S. Survey Feet.

Limitations: This mapping should be used for preliminary design work only and should not replace an actual field survey where the required accuracy is greater than the accuracy stated in this report. No responsibility is assumed for areas outside the contracted scope.



T. Jeffrey Young

T. JEFFREY YOUNG, PSM, CP
FLORIDA REGISTRATION NO. 5440
PICKETT AND ASSOCIATES, INC.
FLORIDA REGISTRATION NO. 364

1/31/22

SURVEY DATE

LD 7275
 DRAWING NO.
 SHEET NO. 5
 1860-5

TOPOGRAPHIC SURVEY
 IONA ROAD LAMPILL
 LOCATED IN SECTIONS 1 & 31
 TOWNSHIP 44&36 SOUTH, RANGE 1&419 EAST
 PREPARED FOR: SCS ENGINEERS

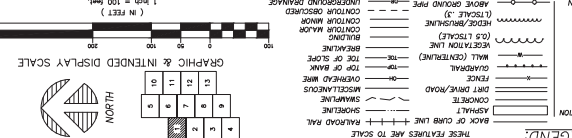


PICKETT
 PICKETT AND ASSOCIATES, LLC
 LICENSED SURVEYORS IN IOWA
 IOWA REG. NO. 33-3894
 1100 WEST 12TH AVENUE
 DES MOINES, IOWA 50319

CONTR. INTERVAL: 1'
 HORIZ. SCALE: 1"=100'
 EDITED BY: DPMN BY: JY
 CHECKED BY: JY
 DRAWING NAME: 1860-5-TR-006
 SURVEYOR AND WARRIOR
 NO. DATE APPROVED
 2/22/22 JY
 FIRST ISSUE
 THIS MAP AND ATTACHED
 REPORT ARE NOT FULL
 COMPLIANT WITH THE
 IOWA SURVEYING ACT
 1/28/22

RIGHT DATE: 1/27/22
 1) THE TOPOGRAPHIC SURVEY WAS
 CONDUCTED BY PICKETT AND ASSOCIATES,
 LLC IN ACCORDANCE WITH THE
 IOWA SURVEYING ACT AND THE
 IOWA PROFESSIONAL SURVEYORS
 BOARD'S REGULATIONS. THE
 SURVEYING METHODS USED WERE
 THE MOST ACCURATE AND
 MODERN METHODS AVAILABLE
 AT THE TIME OF THE SURVEY.
 2) THE SURVEYING DATA
 WERE CHECKED BY JY AND
 FOUND TO BE ACCURATE
 WITHIN THE LIMITS OF
 THE SURVEYING METHODS
 USED. THE SURVEYING
 DATA WERE USED TO
 PREPARE THIS MAP AND
 ATTACHED REPORT.
 3) THIS MAP AND ATTACHED
 REPORT ARE NOT FULL
 COMPLIANT WITH THE
 IOWA SURVEYING ACT
 AND THE IOWA
 PROFESSIONAL SURVEYORS
 BOARD'S REGULATIONS.

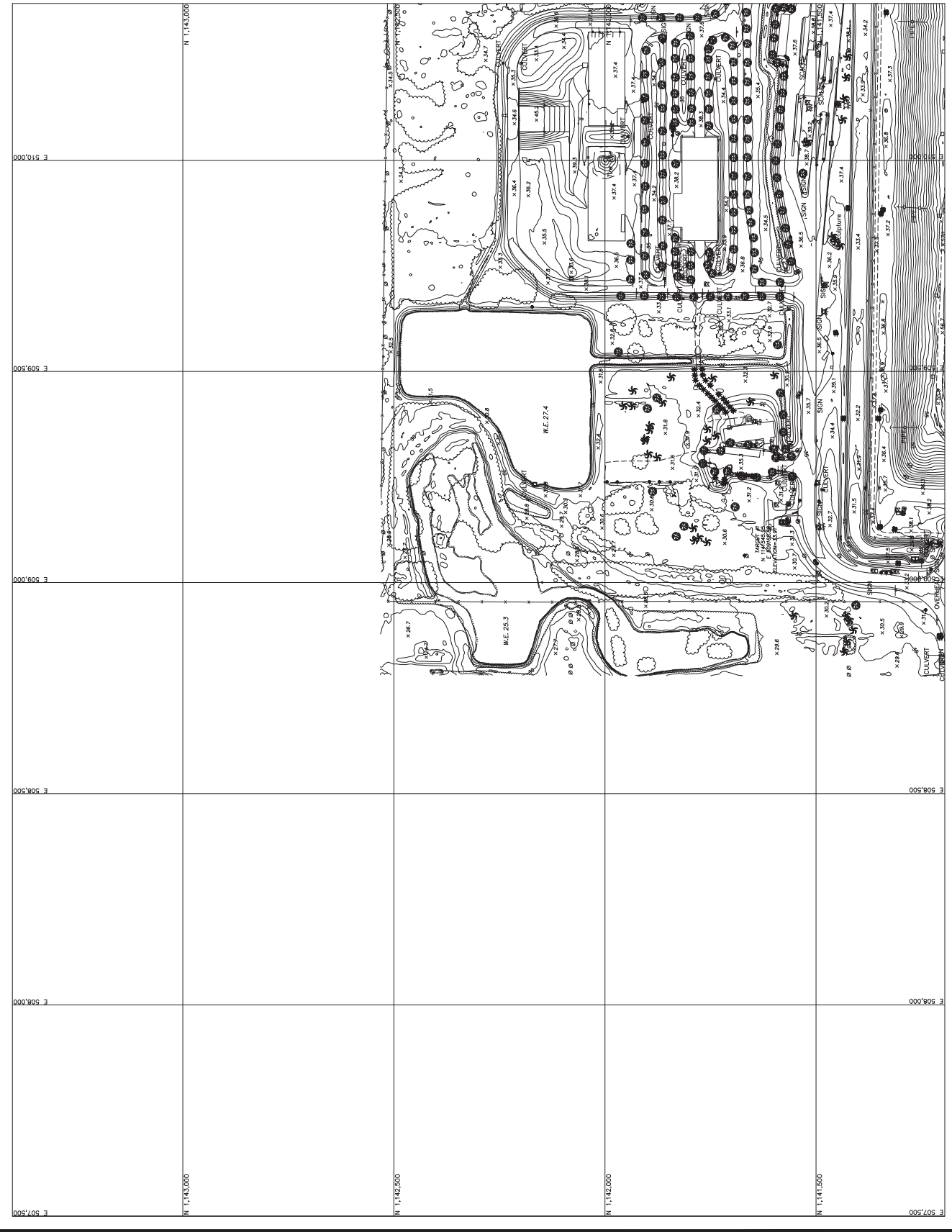
LEGEND:
 SYMBOLS AND INFORMATION LABELS NOT TO SCALE
 A UNKNOWN VALVE
 B ELEVATION MARKER
 C MISCELLANEOUS
 D CATCH BASIN
 E ELEVATION
 F ELEVATION
 G ELEVATION
 H ELEVATION
 I ELEVATION
 J ELEVATION
 K CULVERT
 L SWAMP/WASH
 M SPUR/FLASH
 N NORTHING
 O EASTING
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ACCEPTED: The following stated that the data furnished hereon is accurate to the best of their knowledge and belief and that they have no objection to the use of the same for the purposes intended.

REVISIONS: All revisions shall be indicated by a circled number in the upper right corner of the sheet.

NOTES:
 1. THIS MAP AND ATTACHED REPORT ARE NOT FULL COMPLIANT WITH THE IOWA SURVEYING ACT AND THE IOWA PROFESSIONAL SURVEYORS BOARD'S REGULATIONS.
 2. THE SURVEYING DATA WERE CHECKED BY JY AND FOUND TO BE ACCURATE WITHIN THE LIMITS OF THE SURVEYING METHODS USED.
 3. THE SURVEYING DATA WERE USED TO PREPARE THIS MAP AND ATTACHED REPORT.
 4. THIS MAP AND ATTACHED REPORT ARE NOT FULL COMPLIANT WITH THE IOWA SURVEYING ACT AND THE IOWA PROFESSIONAL SURVEYORS BOARD'S REGULATIONS.



1860-5-TR-006

LD 7275
DRAWING NO. 18600-5
PROJECT NO. 18600-5

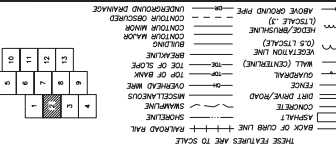
TOPOGRAPHIC SURVEY
LENA ROAD LANDFILL
LOCATED IN SECTIONS 1 & 31
TOWNSHIP 34&35 SOUTH, RANGE 18&19 EAST
PREPARED FOR: SCS ENGINEERS

HORIZ. SCALE: 1"=100'
CONTOUR INTERVAL: 1'
EDITED BY: _____
DRAWN BY: _____
CHECKED BY: _____
DATE: 1/31/22
PROJECT AND ASSOCIATES, LTD.
3710 ARBOR CONCRETE DRIVE IN
LANDING PLAZA, SUITE 200
HOUSTON, TEXAS 77056
PHONE: (281) 433-3000
FAX: (281) 534-1484
LICENSED SURVEYOR IN TEXAS

NO.	DATE	APPROVED	REVISION
1	2/22/22	JY	FIRST ISSUE

- SURVEYOR'S NOTES:**
- Note the grid and the coordinate system herein are referenced to the West Zone of the 1983 datum. The coordinate system used is NAD 83.
 - Elevation is to National Geodetic datum.
 - The topographic survey was prepared using a total station and EDM. See the planimetric and data methods for the elevation report for map accuracy and surveying techniques used.
 - Figure Date: 1/31/22

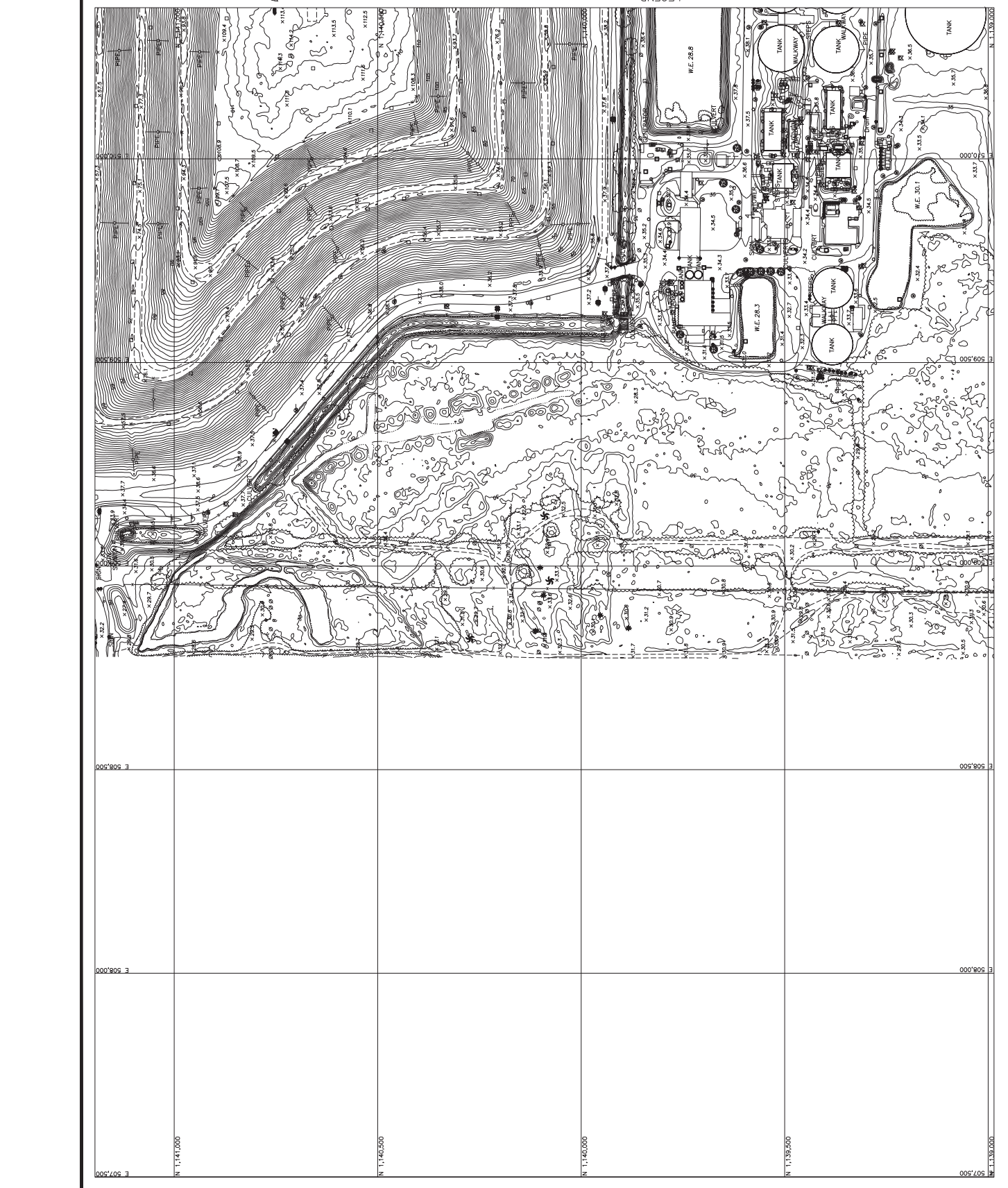
- LEGEND:**
- ▲ TANK
 - UNKNOWN VALVE
 - ELECTRIC RESERVOIR
 - HORIZONTAL DRAINAGE SYSTEM
 - UNKNOWN VALVE
 - 12.5' SPOT ELEVATION
 - TARGET MARKER
 - CATCH BASIN
 - RAILROAD
 - BACK OF CURB LINE
 - RAILROAD
 - SHORING
 - MODEL/ANGULAR
 - BENCHMARK
 - DITCH
 - DRIVE DRIVE/ROAD
 - CONCRETE
 - FENCE
 - WALL (CENTRAL)
 - TOP OF BANK
 - TOP OF SLOPE
 - BUILDING
 - CONCRETE
 - CONTIGUOUS
 - ABOVE GROUND PIPE
 - UNDERGROUND PIPE
 - PO PLANTING GREEN
 - DRAWING RANGE
 - F FARMWAY
 - S SAND
 - T TREE
 - TREE HYDRANT
 - LIGHT POLE
 - SWAMP/MARSH
 - CULVERT
 - K KITCHEN
 - E EASTING
 - N NORTHING
 - PITCH
 - FLAG POLE
 - SION
 - POOL
 - CRYMOR
 - UNKNOWN



SEE PLAN FOR THE LOCATION OF ALL POINTS AND THE ORIGINAL BASED SEAL.

GRAPHIC & INTENDED DISPLAY SCALE

1 inch = 100 feet



LENA ROAD LANDFILL
 LOCATED IN SECTIONS 16 & 31
 TOWNSHIP 34&35 SOUTH RANGE 18&19 EAST
 PREPARED FOR SCS ENGINEERS

TOPOGRAPHIC SURVEY

DATE	1/11/22
BY	SCS
FOR	SCS
PROJECT	LENA ROAD LANDFILL

- SURVEYOR'S NOTES:**
- 1) The spot height in the coordinate system herein was referenced to the east zone of the Florida State Plane Coordinate System, NAD 83, 1980 datum.
 - 2) Elevation are to National Geodetic datum.
 - 3) Station datum of 1928.
 - 4) The spot height was prepared using appropriate and level methods. See the photogrammetry and level methods. See the notes to the drawing for more accuracy and surveys.
 - 5) Right Date: 1/11/22

LEGEND

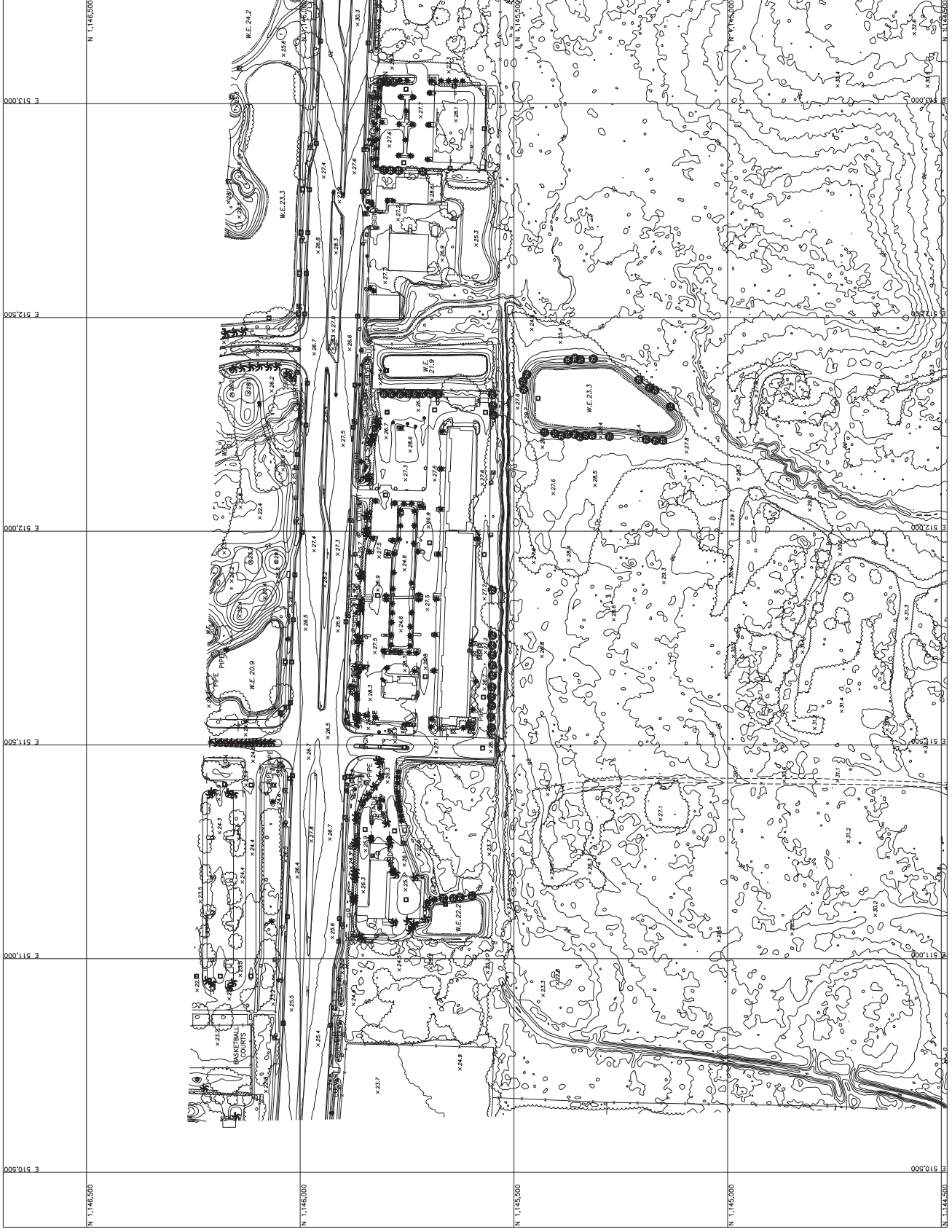
- BACK OF CLUB LINE ---
- RAILROAD RAIL ---
- SHORLAND ---
- SPURLINE ---
- CONCRETE ---
- DRIFT DRIVE/ROAD ---
- ASPHALT ---
- GRASS ---
- TOP OF BANK ---
- TOP OF SORE ---
- CANONICAL ---
- FENCE ---
- ROAD (CENTRAL) ---
- ROAD (SIDE) ---
- RAILROAD ---
- CONTOUR MARKS ---
- CONTOUR MANOR ---
- IMPROVED DRAINAGE ---
- UNIMPROVED DRAINAGE ---

- ▲ POINT AND ASSOCIATES, LLC
 3101 NORTH UNIVERSITY AVENUE
 SUITE 100
 BOCA RATON, FL 33433-1000
 PHONE: (561) 333-1800
 FAX: (561) 333-1848
 LICENSED PROFESSIONAL SURVEYOR
 LICENSE NO. 12934
- PROJECT AND ASSOCIATES, LLC
 3101 NORTH UNIVERSITY AVENUE
 SUITE 100
 BOCA RATON, FL 33433-1000
 PHONE: (561) 333-1800
 FAX: (561) 333-1848
 LICENSED PROFESSIONAL SURVEYOR
 LICENSE NO. 12934

NO.	DATE	APPROVED	REVISION
1	1/11/22	[Signature]	ISSUE

GRAPHIC & INTENDED DISPLAY SCALE
 1 inch = 100 feet

SEE PAGE 1 FOR THE COMPLETE AND THE ORIGINAL RAISED SEAL



TOPOGRAPHIC SURVEY

PROJECT AND ASSOCIATES, LLC
 310 ARMY AVENUE, SUITE 200
 FORT WORTH, TEXAS 76102
 PHONE: (817) 338-1000
 FAX: (817) 338-1048

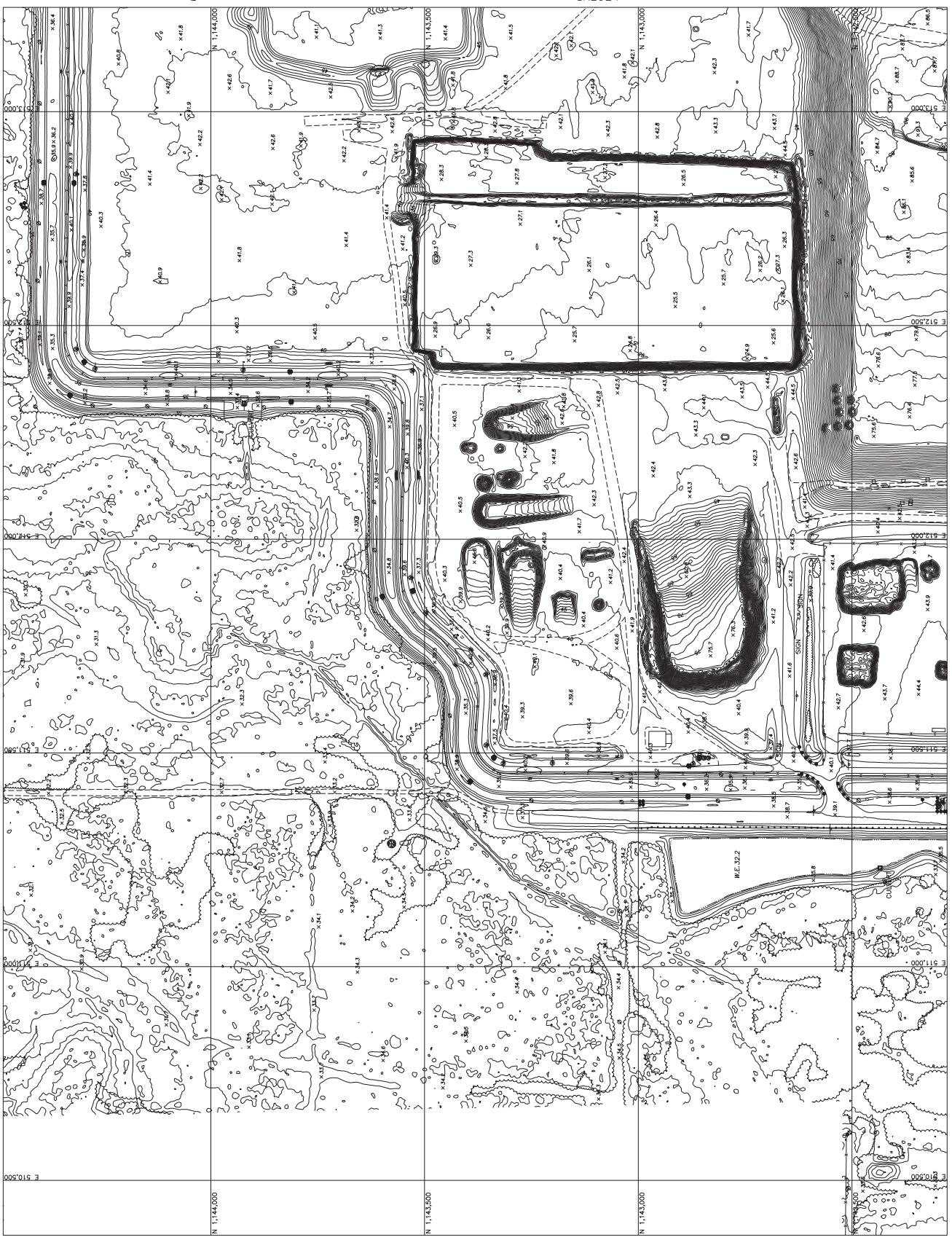
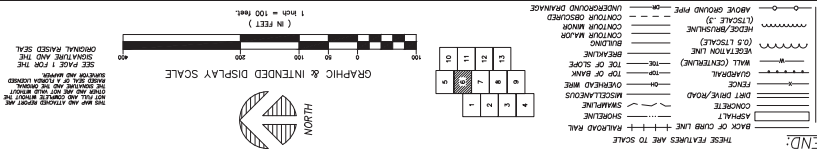
PICKETT

CHECKED BY: _____
 DRAWING NAME: _____
 DRAWING NUMBER: _____

DATE: 2/22/22
 APPROVED: _____
 REVISION: _____

- SURVEYOR'S NOTES:**
- 1) Refer to the plat for the location of the stationing system. All stationing is referenced to the east zone of the Florida State Plane Coordinate System, NAD 83, 1980.
 - 2) Elevations are to National Geographic datum.
 - 3) The topographic map is prepared using photogrammetry and LiDAR methods. See the attached notes for more accuracy and surveying information and see the
 - 4) Right Date: 1/17/22

- LEGEND**
- ▲ STAKES AND INSTRUMENT LABELS NOT TO SCALE
 - A UNUSUAL VALUE
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DATE: 1/17/22
 DRAWN BY: JY
 CHECKED BY: JY
 PLANT: 1800-5-TP-000

TOPOGRAPHIC SURVEY
 LENA ROAD LANDPIT
 LOCATED IN SECTIONS 16 & 31
 TOWNSHIP 34&35 SOUTH, RANGE 18&19 EAST
 PREPARED FOR SCS ENGINEERS



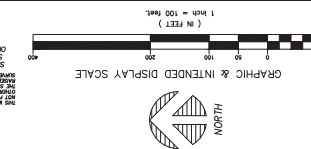
PICKETT AND ASSOCIATES, LLC
 3101 BENTLEY CENTER PARK DRIVE
 PHOENIX, ARIZONA 85018
 PHONE: (602) 933-8800
 FAX: (602) 933-1848
 LICENSED PROFESSIONAL SURVEYOR
 LICENSE NUMBER: 18384

NO. DATE APPROVED	REVISION
1/22/22 JY	FIRST ISSUE

SURVEYOR'S NOTES:

- 1) Verify the grid and coordinate system before use. Refer to the east zone of the Florida State Plane Coordinate System, NAD 83, 1980.
- 2) Elevations are to National Geodetic datum of 1929.
- 3) This topographic survey was prepared using photogrammetry and LIDAR methods. See the attached report for map accuracy and surveyor's signature and seal.
- 4) Right Date: 1/17/22

- STICKS AND MEASUREMENT LABELS NOT TO SCALE
- A UNKOWN VALUE
 - B RECTANGULAR
 - C ELECTRIC RIVER
 - D CATCH BASIN
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DATE	12/22/22
DRAWN BY	JY
CHECKED BY	JY
DRAWING NAME	

TOPOGRAPHIC SURVEY
 LENA ROAD LANDPILL
 LOCATED IN SECTIONS 16 & 31
 TOWNSHIP 34&S3 SOUTH, RANGE 18&E19 EAST
 PREPARED FOR SCS ENGINEERS

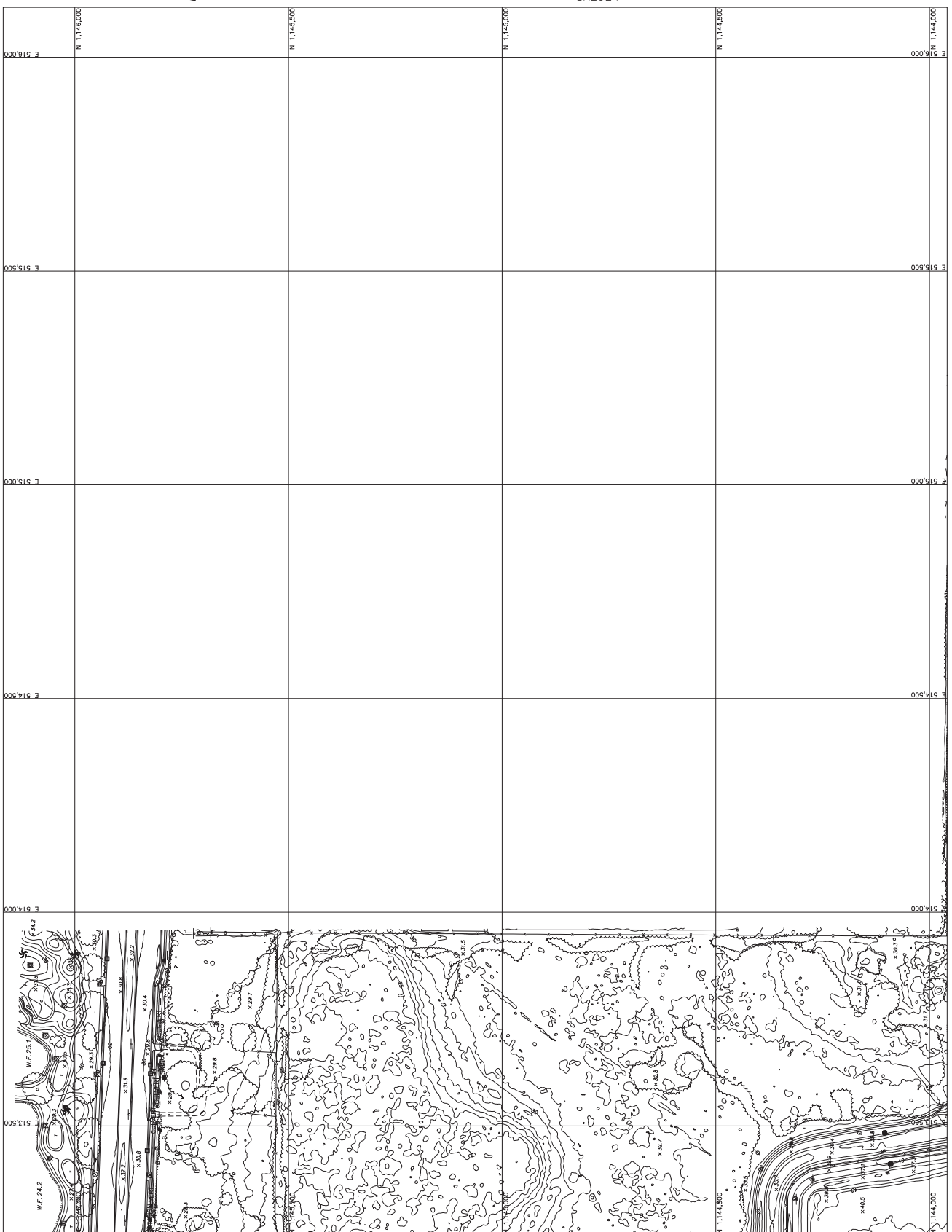
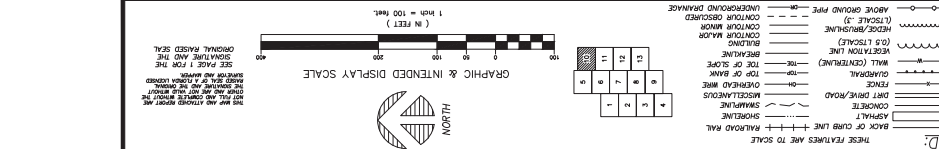


PICKETT AND ASSOCIATES, LLC
 3710 LAUREL CORNER PARK DR
 LAWRENCE, MISSOURI 64503
 PHONE (816) 338-8808
 FAX (816) 338-1644
 LICENSED BUSINESS NO. 18264

DATE	12/22/22	BY	JY
APPROVED			
THIS MAP AND ATTACHED DATA ARE NOT VALID UNLESS PRINTED WITH THIS ORIGINAL RAISED SEAL.			

- SURVEYOR'S NOTES:
- 1.) The right-of-way for the construction shown herein are referred to the east zone of the Florida State Plane Coordinate System, NAD 83, 1980.
 - 2.) Elevations are to National Mean Sea Level.
 - 3.) The topographic survey was prepared using photogrammetry and level methods. See the attached report for map accuracy and surveyor's signature and seal.
 - 4.) Flight Date: 1/17/22

- LEGEND:
- ▲ UNCOMMON VALVE
 - ⊠ RECTANGULAR
 - ⊝ ELECTRIC RISER
 - ⊞ CATCH BASIN
 - ⊡ GUTTER
 - ⊡ CEMENT
 - CONCRETE
 - ASPHALT
 - SHED
 - SPUR
 - DRIVE/ROAD
 - FENCE
 - CANALS
 - MAIL (CENTRAL)
 - TOP OF BANK
 - TOP OF SLOPE
 - BANK
 - ROAD
 - FENCE
 - INTERFERING DRAINAGE
 - CONTOUR OBSERVED
 - CONTOUR MARKER
 - RAILROAD
 - (SCALE 3)
 - WOODS/BUSHLINE
 - APPROXIMATE PIPE
 - BACK OF CLIMB LINE
 - RAILROAD BAL.



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TOPOGRAPHIC SURVEY
 LENA ROAD LANDFILL
 LOCATED IN SECTIONS 16 & 31
 TOWNSHIP 34&35 SOUTH RANGE 18&19 EAST
 PREPARED FOR SCS ENGINEERS

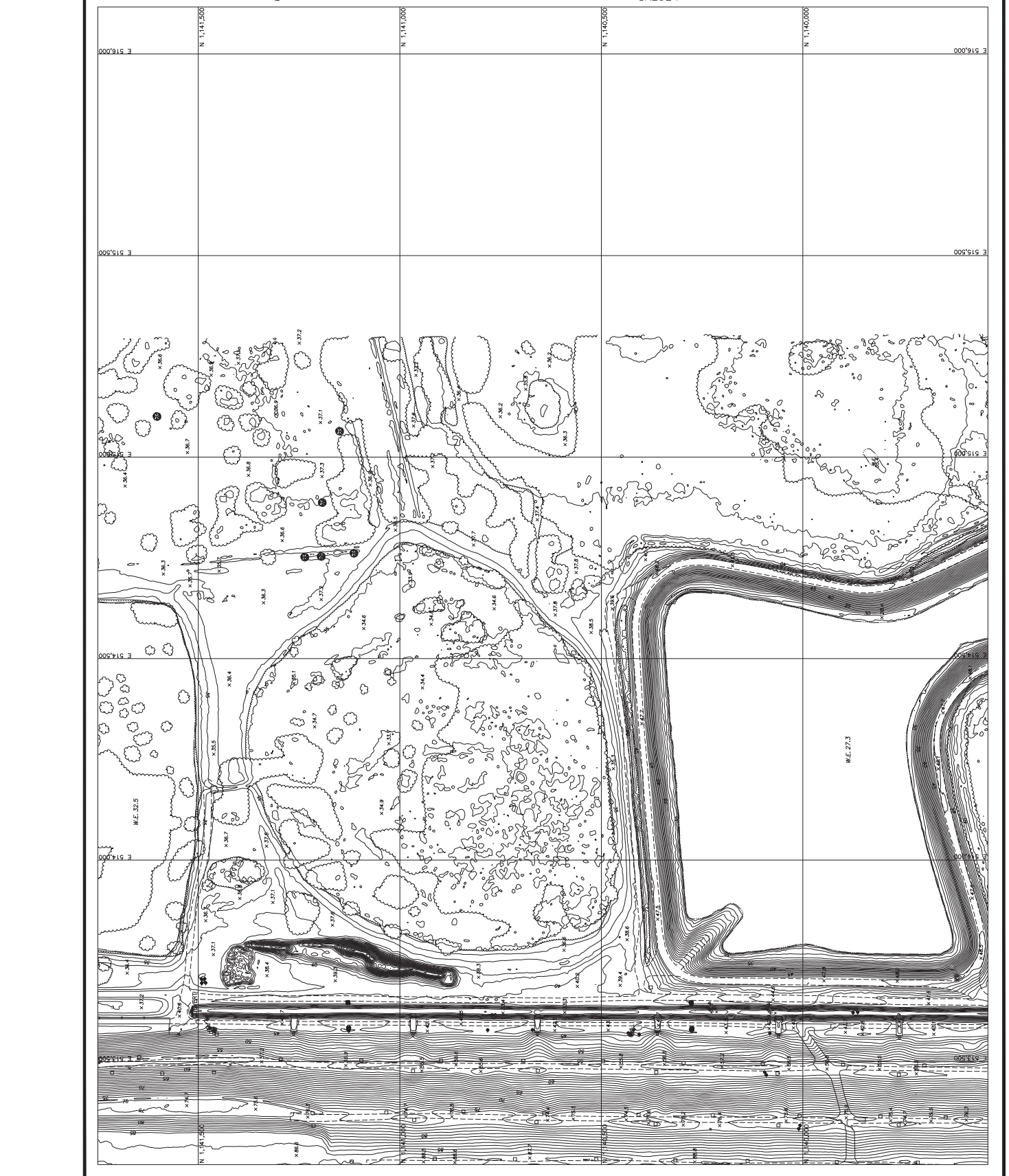


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 LICENSED PROFESSIONAL SURVEYOR
 LICENSE NUMBER 10118

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NO.	DATE	APPROVED	REVISION
01	2/22/22	JAY	FIRST ISSUE

LEGEND:
 STIPPLES AND HATCHING PATTERNS NOT TO SCALE
 1. 1" = 120' HORIZONTAL SCALE
 2. 1" = 120' VERTICAL SCALE
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GRAPHIC & INTENDED DISPLAY SCALE
 1 inch = 100 feet



ATTACHMENT B
REMAINING LIFE AND CAPACITY CALCULATIONS

CLIENT Manatee County	PROJECT Lena Road Landfill Site Life Calculations	JOB NO. 09217088.24
SUBJECT Projected Remaining Capacity and Site Life - 5 Year Average Lena Road Landfill	BY KBB	DATE 4/5/2022
	CHECKED SRF	DATE 4/22/2022

Reporting Year	Historical Tonnages (Tons) ¹	Volume Used (CY)	Apparent Density (lbs/CY)
2018	335,607.40	490,000	1,369.83
2019	292,722.41	480,380	1,218.71
2020	330,794.09	477,956	1,384.20
2021	300,284.89	510,892	1,175.53
2022	351,395.63	507,849	1,383.86
5-Year Average =		493,415	1,306.43

5-Year Average Density = Lbs / CY

Volume Consumed

Between 2/3/21 and 1/31/22 = CY

Average Volume Consumed (5-Year Average) = CY

Remaining Volume For Waste Placement
(Final Closure Cap System Removed)

Remaining Volume as of 2/3/21 = CY

Remaining Volume as of 1/31/22² = 10,109,872 CY - 507,849 CY = CY

Remaining Capacity as of January 31, 2022

Remaining Years of Life From 1/31/22³ = 9,602,023 / 493,415 = Years

Year of Closure =

Notes:

- 1 Waste received for this reporting year is the amount reported by Manatee County from scale data reports for full months, estimated by SCS for partial months.
- 2 Volume remaining based on calculating airspace between top of waste elevation and January 31, 2022 topographic survey using AutoCAD 3D.
- 3 Remaining life is calculated by dividing the average volume consumed per year into remaining volume for waste placement.